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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/686,937	10/16/2003	Bin Wu	KCX-692 (19490)	4594

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EXAMINER	
ARNOLD, ERNST V	
ART UNIT	PAPER NUMBER
1616	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/15/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/686,937	WU ET AL.	
	Examiner	Art Unit	
	Ernst V. Arnold	1616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 November 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-60* is/are pending in the application.

4a) Of the above claim(s) *31-60* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claims 1-60 are pending. Claims 1-30 are under examination.

The Examiner has carefully considered Applicant's remarks filed on 7/24/06. Applicant's arguments are not persuasive. Accordingly, this action is FINAL.

Withdrawn rejections:

Claims 1 and 2 were rejected under 35 U.S.C. 102(b) as being anticipated by Mayer et al. (WO 00/29036). Applicant asserted that Mayer et al. does not disclose a method of reducing odor and the Examiner is withdrawing the rejection.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 5, 8-11, 13 and 17-20 are rejected under 35 U.S.C. 102(b) as being anticipated by Stoddart et al. (EP 1214878A1).

Stoddart et al. disclose methods to control undesirable odors such as ammonia that utilize certain urease inhibitor complexes formed from a divalent metal ion and a polyanionic, preferably amine based, chelating agent (Abstract). A preferred complex used in the method is the copper salt of N-hydroxyethyl-ethylenediamine-triacetic acid (Cu-HEDTA), which is brought into contact with the body fluids thus reading on instant claims 1, 2, 5 and 21 ([0005], [0006], [0017-0022] and claims 2 and 5). Reactant concentrations may be limited by their solubility in the reaction mixture ([0016]). The Examiner interprets this to mean that the chelating agent is

water-soluble and thus reads on instant claim 3. The composition can be combined with pet litter, which comprises high surface area particles such as various clays and thus anticipate instant claim 13 ([0035]). The composition can be utilized in a wide variety of articles and devices such as wiping clothes, diapers (which are comprised of cellulose fibers) and paper towels where the composition is absorbed into, adsorbed onto or chemically linked or bonded to the substrate thus reading on instant claims 17-20 ([0039-0042]). A bis-epoxide can be used to link HEDTA to cotton thus reading on instant claims 8-11 ([0043] and [0056]).

Response to arguments:

Applicant asserted that Stoddard et al. do not describe a transition metal providing one or more active sites for capturing an odorous compound. The Examiner cannot agree. Stoddard et al. describe a Cu-HEDTA complex, which meets the limitation of a transition metal and a polydentate compound.

Applicant asserted that Stoddard et al. do not teach or suggest providing one or more active sites for capturing odorous compounds. However, Applicant admits that Stoddard et al. describe a compound with a site for binding urease. It is the position of the Examiner that this site can bind an odorous compound just as easily as it can bind urease and presence of any odorous compounds would compete with the binding of urease. The compound of Stoddard et al. cannot discriminate between urease and odorous compounds.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-12, 17-26, 29 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Forestier et al. (US 5,547,676) in view of Stoddart et al. (EP 1214878A1) and Sebag et al. (US 4,275,054).

Forestier et al. teach a deodorant composition comprising at least one dendrimer bearing a primary amine group, which can be a polyalkylamine, and methods of use (Abstract and claims 1-15). The methods include contacting the composition to the underarm area (Claim 15). The dendrimers can be selected from polyethyleneimines, which can have positively charged amino groups, and polypropyleneimines (Column 3, lines 55-62). The deordorant compositions can also contain active agents such as water-soluble zinc salts (Column 4, lines 23-34). A method of using the composition to inhibit the development of odors derived from sweat, a component is ammonia, is taught by Forestier et al. (Column 6, Example 1). Forestier et al. teach that the composition can find application in the fields of textiles and litters for animals (Column 6, lines 1-5).

Sebag et al. teach deodorant compositions comprising cationic polymers such as polyethyleneimines (Column 4, lines 37-42; Column 15, Table 1, number 7 and claims 1 and 2). Sebag et al. teach crosslinking is effected with a crosslinking reagent selected fro the group consisting of epihalohydrins, diepoxides, dianhydrides, unsaturated anhydride and the bis

unsaturated derivatives and provide several examples using epichlorohydrin (Column 3, lines 25-30 and Column 8, Example Ia, for example).

Stoddart et al. is discussed in detail above and that discussion is hereby incorporated by reference.

1. Forestier et al. does not expressly disclose the method of crosslinking the polydentate compound.

It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to use epichlorohydrin for the purpose of crosslinking, as suggested by Sebag et al., the polydentate compound of Forestier et al. and produce the instant invention.

One of ordinary skill in the art would have been motivated to do this because Sebag et al. establish the equivalency among these reagents for doing this type of chemistry.

2. Forestier et al. do not expressly disclose the method of applying the coordination complex to a substrate.

It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to apply the deodorizing composition of Forestier et al. to a substrate, as suggested by Stoddart et al. with the crosslinking reagents as suggested by Stoddart et al. or Sebag et al. for the purpose of making deodorizing garments or animal litter and produce the instant invention.

One of ordinary skill in the art would have been motivated to do this because Stoddart et al. provide the means to absorb, adsorb or chemically graft the composition to economically important products.

From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the claimed invention, as a whole, would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made, because every element of the invention and the claimed invention as a whole have been fairly disclosed or suggested by the combined teachings of the cited references.

Claim Rejections - 35 USC § 103

Claims 1, 13-16, 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Forestier et al. (US 5,547,676) in view of Stoddart et al. (EP 1214878A1) and Connolly (US 5,120,693).

The references of Forestier et al. and Stoddart et al. are discussed above and that discussion is hereby incorporated by reference.

Connolly et al. teach agglomerates of zeolitic molecular sieves which are bonded with particles of spherical amorphous colloidal-sized silica particles having nominal diameters in the range of 40 to 800 nanometers which are ideally suited for use in odor elimination (Abstract).

Forestier et al. do not expressly disclose a method comprising combining high surface area particles with the transition metal and polydentate compound wherein the particles are formed form silica, alumina or combinations thereof and wherein the particles have an average size of less than about 100 nm and a surface area of from about 50 to about 1000 square meters per gram and wherein the particles have a negative zeta potential.

It would have been obvious to one of ordinary skill in the art at the time the claimed invention was made to combine the deodorizing composition of Forestier et al. to a high surface area particle, as suggested by Stoddart et al., wherein the particles have an average size of less than about 100 nanometers as suggested by Connolly et al. and produce the instant invention. It is within the purview of one of ordinary skill in the art to maximize the odor reducing capability of the particles by experimentation with different particle sizes. It is the Examiner's position that since the method using the composition appears to be the same then the method would instrinsically have particles with a negative zeta potential.

One of ordinary skill in the art would have been motivated to do this because Connolly et al. teach that particles of this size are readily incorporated into fibrous articles, firmly retained within the fibrous article during packaging, transport and use thereof and exhibit increased effectiveness in sequestering at least some of the common constituents of unpleasant odors (Column 2, lines 55-67).

From the teachings of the references, it is apparent that one of ordinary skill in the art would have had a reasonable expectation of success in producing the claimed invention. Therefore, the claimed invention, as a whole, would have been prima facie obvious to one of ordinary skill in the art at the time the invention was made, because every element of the invention and the claimed invention as a whole have been fairly disclosed or suggested by the combined teachings of the cited references.

Response to arguments:

Applicant asserted that Forestier et al. do not describe forming a coordination complex between a transition metal and a polydentate compound. The Examiner cannot agree. Forestier et al. teach polydentate ligands and adding transition metals. Forestier et al. do not have to describe forming a complex between the polydentate compounds and transition metals because such a complex is intrinsic in adding those components together. Support for this statement can be found in Applicant's specification on page 23 example 1, where Applicant added copper chloride to polyethyleneimine and noted an immediate color change and formation of a coordination complex. Objective evidence of nonobviousness, if any, must be commensurate in scope with that of the claimed subject matter. In re Kulling, 14 USPQ2d 1056 (Fed. Cir. 1990); In re Lindner, 173 USPQ 356 (CCPA 1972).

Conclusion

No claims are allowed.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ernst V. Arnold whose telephone number is 571-272-8509. The examiner can normally be reached on M-F (6:15 am-3:45 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Johann Richter can be reached on 571-272-0646. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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